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ART. CCXVIII. — *Further Remarks on Botanical Classification.* By THOMAS EDMONSTON, JUN., Esq.

Aberdeen, April, 1844.

SIR,

I beg to trouble you with a few remarks on Dr. Ayres's letter (Phytol. 885), replying to my former paper, (Id. 759).

Dr. A. seems, in the first instance, to have quite misunderstood my meaning in objecting to the abandonment of the Linnæan system; if he keeps in view my primary proposition, that an artificial scheme is necessary to the *beginner*, he will find that much of his reasoning is thrown away, and that not seldom he is arguing in parallel lines with myself. I never objected to the "natural" system as a *part of the study of Botany*, and my arguments were mainly intended to show how improper a system it is for a student. Bearing this in mind, I shall shortly examine the value of some of Dr. Ayres's vindications.

In the first place, I confess I can see little analogy between the Linnæan system and an "index," to which Dr. A. is pleased to liken it. By an index we ascertain indeed the name of any article we are wishing to find in a bulky encyclopœdia or other book, but nothing more. Will Dr. Ayres say that after we have, by the aid of the Linnæan system, acquired the knowledge of the name of a plant, we still know nothing of that plant? Must we not first ascertain the number and position of its stamens, then the character of its calyx, corolla, fruit &c., next of its root, leaves, inflorescence, &c.; and all this before we can know the name? And from the first step, the ascertaining of its class, we are continuing to acquire information regarding the structure of the plant. The "natural" botanists wish to be in a great hurry, teaching the student all about the plant at the outset, and making him learn at first what he would far better become acquainted with at a later stage of his progress; in short, in homely phrase, "putting the cart before the horse." If a Linnean botanist were to say to the student, "You must find out the number and position of the stamens and pistils of that plant, but do'nt stir a step further, as you reverence the memory of him of Upsala; all you have to do is to know that such a plant belongs to Pentandria, Monogynia, you have no concern with anything else:"—then indeed "stale and unprofitable" would be the information gained; but can we disconnect the knowing the class and order from knowing the genus and species? The one is a means to the other, and is valueless by itself. The simple difference between the *modus operandi* of the two systems is this; by the Linnæan you are conducted by easy stages to the knowledge of the species, by the other you are immediately, or nearly so, brought into contact with what should have been your last step.

Dr. Ayres seems to ground his defence of the natural system on a most extraordinary hypothesis, viz., the assumption that all the abstractions we term classes, orders, genera, &c., have as much a "local habitation and a name" as the abstraction we term species, and he doubtless thinks himself triumphant in naming them all "inductions from individuals;" Dr. Ayres at the same time, however, makes mention of the particular point in which species differ from every other "induction," namely, their "capability of propagating their like." Is not *this* an essential difference from all other inductions? Do genera, or classes, or orders, "propagate their like?" What sort of a *hybrid* would the two abstractions Ranunculaceæ and Cruciferæ produce? Yet if they are all alike inductions from a beginning, then they must all have analogous properties, and two genera, or two orders, must produce hybrids, and "propagate their like" in the same way as two species. It is obvious to every unprejudiced mind, that Nature *has* created individuals having certain common peculiarities which no other induction from individuals possesses, and to these we give the name of *species*. Where the line is drawn we cannot often tell, and wofully shall we find philology to fail us in endeavouring to thread the mysterious mazes of Nature's labyrinth. We must be content to descend from the high pinnacle of metaphysics, and take the more homely guidance of experience and analogy, in viewing with our finite and imperfect vision the infinite and perfect works of the Eternal. But a more unfortunate line of argument could scarcely be pitched on for the feasibility of a natural system, than that which alleges that all our groupings have actually an existence in the scheme of Nature. It assumes that every plant has its proper niche, and that there is a regular gradation of affinity between the highest and the lowest forms of vegetable life. Now we are perhaps acquainted with two thirds of the plants on the globe, say three fourths, and in all probability not more are known to science. What a faint and indistinct glimmering of the *true* System of Nature must we have! How many gaps to be filled up! How many erroneous affinities to be corrected!

What a "combination of disjointed things" — nay, not only "disjointed," but a system affected with *fragilitas ossium*, where every bone is broken, and nothing to be seen but here a fragment and there a fragment, a little of everything and nothing complete! Can such a dismembered system, such a collection of *debris*, be of any real practical use? I should say no!

Dr. Ayres considers my quotation from Dr. Lindley as "not sufficiently ample." I confess I do not well understand the *two* senses in which a group may be "natural." Dr. A. says "he (Dr. Lindley) implies that Nature has not indeed created species, orders, genera, or other groups, as such, but has imprinted such characters and affinities on plants as enables us to throw them into groups approximating more or less to the scheme of Nature, and in that sense natural." Now this distinction is somewhat too nice for my organs of discrimination: if Nature has indeed formed such a chain of characters and affinities, then we must say that she has formed the groups which are the tangible representatives of these characters. We cannot say that Nature has created a *name*, as a genus or an order, but if she has created the *thing* we represent and understand by the *name*, where is the difference? The word *species* implies a congeries of individuals having certain common peculiarities and distinctions; and when we say "Nature creates species," we mean that she creates individuals having the properties which we attribute to the abstraction—species.

Dr. Ayres wishes to establish the existence of a plan of Nature by asserting that plants possess certain "gradations of affinity," and are connected with each other by "oscillatory groups." It has not been my good fortune to fall in with these regular "gradations of affinities;" and as to "oscillatory groups," the system generally seems affected with a continual "oscillation," and to be never at rest; for, says Dr. Lindley, "the natural orders seldom follow in the same manner in the arrangements of two different botanists." The existence of regular and connected "gradations of affinity" is just the point I dispute, for I conceive they have, in most instances, their being rather in imagination than in fact, and a group is dubbed "natural," and its "affinities" and "transitions" marked out with unerring accuracy forthwith, in which state it remains for perhaps six months, till some other botanist conceives its position "unnatural," and transfers it to some other place, from thence, in turn, to be removed. If the high-flown pretensions of the natural school were realized, and every genus and every species, from the highest to the lowest type of vegetable life had its true place in the scale of being assigned to it, then indeed we should lay aside the Linnæan system, the "last loved echoes" of Monandria and Diandria would soon die away, and the faint glimmering light of the Swedish botanist be eclipsed by the noon-tide splendour of the "System of Nature." As, however, unfortunately, this pitch of perfection has not been reached, nor in my opinion ever will, nor *ever can be,* I must take leave to dispute the existence of these "regular gradations of affinity," and count all systems hitherto propounded as alike remote from the System of Nature. Which must necessarily be the case, for I maintain no such system exists, save in the heated imaginations of some over-enthusiastic followers of this visionary school.

Allow me to ask Dr. Ayres, if one group of plants is defined according to the character of its stamens, and another according to the character of its seeds, are they not both equally "artificial"? We shall find that the latter condition is frequently the case in many "natural" orders, for when their definitions are disencumbered of superfluous matter, their essential characters are as limited as those of the Linnæan system.*

We shall take our former example, Ranunculaceæ, and after rejecting the characters which are either inconsistent, and therefore improper to be introduced into Nature's own system, or common to other groups, we shall see what a multitude of points the plants referred to agree in. The definition given by Dr. Ayres from Lindley, is, "Polypetalous dicotyledons with hypogynous stamens, anthers bursting by long slits, several distinct simple carpella, exstipulate leaves sheathing at the base, solid albumen and seeds without arillus." Now all the species are not "polypetalous," inasmuch as some are *apetalous,*" neither have all the species "several distinct simple carpella," for in some species the carpels are coherent,—partially in Nigella and wholly in Actæa. Other orders are, equally with Ranunculaceæ, "dicotyledonous with hypogynous stamens, anthers bursting by long slits, exstipulate leaves sheathing at the base." Thus the characters drawn from the seeds are the only unexceptionable ones, and the group is manifestly as artificial as if it were characterized from the stamens or any other single part.

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* A remarkable instance of this occurs in Detarium, a genus of Leguminosæ, which has the icosandrous stamens and drupaceous fruit of Amygdaleæ, and only differs from that order by having compound leaves; so that the latter character is the *only* distinctive one between the two groups Leguminosæ and Amygdaleæ, however unlike the typical species may be.

Let us take two British plants referred to this order, and glance at their points of similarity. The two species may be Ranunculus Ficaria, and Actæa spicata. In the former, the leaves are simple, the stem single-flowered, the sepals three, the petals nine or ten, and nectariferous at the base, the carpella distinct and ultimately forming single-seeded caryopsides. In Actæa the leaves are compound, the stem is many-flowered, the sepals and petals four in number, the latter without nectarium, the carpels single, and the fruit a many-seeded berry.

These two plants are exactly opposite in the character of their leaves, inflorescence, calyx and corolla, and fruit, yet this is a "natural" group! — Its members have such a general and at once apparent resemblance, that they may be immediately recognized; they do not agree in one character only, in a multitude of points are they alike; there is no assemblage of "disjointed things" here, all is the harmony of Nature, the system of Creation !!! We are far from that point, I fear, and botanists will soon perceive what an *ignis fatuus* they are pursuing, and seeing the fallacy of the specious theories and bold pretensions of the natural school, return to the simple and philosophical method of acquiring knowledge in the easiest manner, and without troubling their heads about hunting out "affinities" which have no existence, and "transitions" and "oscillatory groups" which have yet to be formed. Let it be borne in mind that by these remarks I do not mean to say that the "natural" system is or ought to be thrown aside; let it be studied in its proper place, and it will be productive of much and lasting benefit. It can scarcely be otherwise, since it bears the impress of the great minds of a Jussieu, a Brown, a Decandolle, and a Lindley; but let it not be foisted forward where it can only disgust and perplex. What would be thought of a teacher of Algebra, who should put the binomial theorem into the hands of his pupil, while he was yet ignorant of the signs? Yet this is exactly what is recommended by those botanists who wish the natural to supersede the artificial system; they would teach the student complicated theories before he has any knowledge of the plants from a comparison of which these theories are formed: and because certain tribes of plants occur in which *true* natural resemblances exist, they hastily assume that such is *universally* the case: and overlooking the legitimate ends of classification, spend needlessly much time and reasoning in attempting to prove the "thing which is not." Let the artificial and the natural systems proceed *pari passu;* they will never be found to come into contact, but to work in sisterly harmony, each confined to its proper sphere, towards the great end of an increased knowledge of the boundless and wondrous variety of vegetable life and structure. The " artificial " will not quarrel with the " natural " because it is not and never can be the System of Nature; and the natural will tolerate some sacrifices of evident affinity made to precision and clearness of definition by the artificial. Let botanists also occupy themselves in endeavouring to *improve* the Linnæan system, so as to adapt it to our more extended knowledge, and then I have no hesitation in saying that it will never be laid on the shelf, but will be immortal as the science, or as the memory of the giant mind that framed it.

I remain, Sir,
Your obedient Servant,
THOMAS EDMONSTON, JUN.

To the Editor of 'The Phytologist.'

P.S. — Since the above remarks were penned, I have received the April and May numbers of 'The Phytologist,' in which I am glad to find so able and justly distinguished a supporter as Mr. Forster, as it proves that even among those who hold a high rank as botanists, there are still some who do not consider it imperative on them to " follow the fashion " (as I must still beg leave to call the "natural" system, notwithstanding Dr. Ayres' animadversions on the term). I am unwilling to trespass too largely on your space, and will merely offer one brief remark on Dr. Ayres' second paper. The foregoing will, I trust, explain to him my ideas of the nature of species, of which, as it appears to me, he has taken a far too *transcendental* view. It is needless repeating what has already been said; but if Dr. A. will pardon me, I would beg to suggest the getting rid, as speedily as possible, of these ultra-metaphysical views as applied to Botany, for I am sure a little reflection will convince him of the impossibility of applying the strict rules of logical induction to the boundless and ever-varying phenomena of Nature. With this brief remark I trust that Dr. A. will feel satisfied that the preceding remarks do not leave " untouched the great question of the comparative beauty and utility of the two rival systems." T. E.

ART. CCXIX. —*List of Flowering Plants found in the neighbourhood of Great Marlow, Bucks, in the early part of the Summer of* 1843. By G. G. MILL, Esq.

THE country about Marlow, in Buckinghamshire, is scarcely if at all known to the botanist; indeed it is very little known to any except those in the immediate neighbourhood, and to a few anglers who visit it from its proximity to the Thames.

After passing three summer months there, and being well repaid, as far as botanical researches went, I think it will probably be interesting to the readers of 'The Phytologist' to have some account of the plants of that neighbourhood.

The plants which grow there are either those of a chalk country, or such as are fond of the banks of rivers and the neighbouring alluvial soil, with the swamps and deep ditches which usually attend it; there are also the plants of wet woods, of which there is no lack in the country, it being composed for the most part of low ranges of thickly-wooded hills.

The plants of which there is a deficiency are such as grow on a sandy or dry gravelly soil, on open heaths, or on wet spongy commons, as will be seen by the following list.

Clematis Vitalba. Hedges, frequent.

Thalictrum flavum. About New Lock and Medmenham abundant, and by the Thames generally.

Ranunculus aquatilis. Ponds &c.

——— *hederaceus.* In ponds on a common by the Oxford road, about half way between Marlow and Stokenchurch.

——— *Flammula.* Cookham-dean, &c.

——— *Lingua.* By the water called the Strand, Cookham.

——— *Ficaria.* Thickets and woods.

——— *auricomus.* Woods.

——— *bulbosus.* By road-sides occasionally.

——— *sceleratus.* By the sides of ponds.

——— *arvensis.* Fields on both sides of the Wycombe road, about two miles from Marlow, very abundantly, and elsewhere.

——— *parviflorus.* On the left bank of the Oxford road, immediately out of the town.

Caltha palustris. By the river, frequent.

Aquilegia vulgaris. Bisham wood, and moist woods generally.

Nymphæa alba and *Nuphar lutea*. Thames near Temple, &c.

Papaver Argemone and *Rhœas*. Corn-fields, frequent.

——— *dubium*. Walls and banks near the town, &c.

Chelidonium majus. Road-sides, Bisham wood by Winter hill.

Nasturtium officinale. Ditches and ponds.

——— *amphibium*. Banks of the river &c. frequent.

——— *terrestre*. By the sides of ponds.

Turritis glabra. In a coppice at the top of Cookham down, extremely plentiful.

Arabis hirsuta. On the bank of the lane which turns off from the Little Marlow road opposite Sir G. Nugent's, about two miles up the lane, sparingly.

Sisymbrium officinale and *Alliaria officinalis*. Frequent.

Brassica campestris. Abundant by the Thames.

Sinapis arvensis. This plant grows but sparingly in this neighbourhood, being replaced by *S. alba*, which abounds everywhere.

Thlaspi arvense. Common fields opposite Bisham wood, abundantly.

Iberis amara. This is a common plant in the corn-fields about Marlow; it grows most profusely in a wood overhanging the Henley road at Medmenham.

Raphanus Raphanistrum. Corn-fields, abundant.

Reseda lutea. Fields between the Oxford and Wycombe roads &c.

——— *Luteola*. Chalk-pits, Medmenham &c.

Helianthemum vulgare. On the chalk, abundant.

Polygala vulgaris. Very common on the chalk.

Dianthus Armeria. By the side of the Henley road, Hambledon, also by the Little Marlow road by Sir G. Nugent's.

Lychnis Flos-cuculi. Wet meadows, frequent.

——— *vespertina* (dioica β.) and *diurna* (dioica).

——— *Githago*. Common fields opposite Bisham woods &c.

Sagina procumbens and *apetala*.

Spergula nodosa. Winter hill and Cookham down.

——— *arvensis*. Corn-fields.

Stellaria holostea. Hedges.

——— *glauca*. By the side of the deep ditch which bounds the meadow immediately above the suspension bridge.

——— *graminea*. Dry places, frequent.

Malachium aquaticum. Wet places by the river.

Arenaria serpyllifolia. Walls, frequent.

Malva moschata. Fields to the left of the Wycombe road just beyond the town.

—— *sylvestris* and *rotundifolia.* Under walls and by road-sides.

Hypericum Androsæmum. At the top of Bisham wood, and in moist woods, generally.

———— *quadrangulum.* By the river side and the sides of ditches occasionally.

———— *perforatum.* Very common.

———— *humifusum.* On a little common to the right of the Wycombe road, also on the terrace of Sir W. Clayton's.

———— *hirsutum.* Common.

———— *montanum.* Woods south-east of Marlow common; woods between the Wycombe and Oxford roads &c.

———— *pulchrum.* Frequent in dry places.

Acer campestre. Hedges.

Geranium pratense. Banks of the river abundantly.

———— *pyrenaicum.* Not very common.

———— *pusillum.* Common.

———— *dissectum.* By road-sides &c. frequent.

———— *columbinum.*

———— *molle.* Frequent.

———— *lucidum.* On the bank of a lane turning out of the Little Marlow road, on the left, beyond Little Marlow; it grows not far from the main road.

———— *robertianum.* Lanes &c.

Linum catharticum. Winter hill &c.

Oxalis Acetosella. In all the woods.

Euonymus europæus. Bisham wood and hedges generally.

Ulex europæus. Little common about two miles from Marlow, on the Wycombe road.

Genista anglica. Cookham down.

Ononis arvensis. Occasionally.

Anthyllis vulneraria. In two or three places on the chalk.

Melilotus officinalis. New Lock.

Trifolium arvense. Little hollow opposite Sir G. Nugent's.

———— *pratense, repens, procumbens, filiforme.*

Lotus corniculatus and *major.*

Astragalus glycyphyllos. In the thicket on the right hand side of the road from Hedsor to Clifden, about half way up the ascent to Clifden, growing very luxuriantly.

Vicia hirsuta and *tetrasperma*. In a lane leading from the Henley road to King's farm, and in the road which overhangs the farm.

—— *Cracca, sepium* and *sativa*. Frequent.

Lathyrus pratensis. Bisham wood &c.

Orobus tuberosus. Woods &c.

Spiræa Ulmaria. Wet meadows by the river.

——— *Filipendula*. Meadow by the river between Bisham wood and the town, abundant.

Geum urbanum.

Poterium Sanguisorba. In dry places.

Agrimonia Eupatoria. Road-sides.

Alchemilla vulgaris. In woods north-west of Marlow, beyond Marlow-common.

———— *arvensis*. Frequent.

Potentilla anserina, argentea, reptans, Tormentilla.

Fragaria vesca. Woods, frequent.

Rubus Idæus. On Marlow-common and in the wood to the right.

—— *cæsius*. Bisham wood.

Rosa rubiginosa. In hedges about Wycombe, on the Marlow side.

—— *canina*. Hedges, frequent.

—— *arvensis*. On the borders of woods &c. but not nearly so frequent as the former.

Pyrus Malus. Hedges occasionally.

—— *Aria*. Bisham wood &c. very abundant in the neighbourhood.

Lythrum Salicaria. Banks of the Thames, abundant.

Epilobium angustifolium. In the wood of Harleyford, in great profusion; also in Bisham wood, but sparingly.

———— *hirsutum*. Banks of the Thames, abundant.

———— *parviflorum*. Wet places.

———— *montanum*. Very common.

———— *tetragonum*. Bisham wood.

Circæa Lutetiana. Woods.

Myriophyllum verticillatum. There are few ditches or ponds about Marlow which do not produce this plant; it grows more especially, however, in the deep ditches above the suspension bridge; also copiously in the wood by Sir W. Clayton's park near the house, as well as in a little pond in the middle of a field immediately under Bisham wood, about half way between the river and the Maidenhead road.

—————— *spicatum*. Much less common than the former; it only grows, I believe, in the shallow ponds on Cookham dean, at the top of Bisham wood.

Bryonia dioica. Common in the hedges.

Scleranthus annuus. Common in corn-fields about Maidenhead.

Sedum Telephium. In a lane between the Oxford road and hills on the left, a little way out of the town; also very abundantly in the first lane turning out of the Little Marlow road on the left, beyond Little Marlow.

—— *acre.* Walls &c.

Ribes Grossularia. Bisham wood, and on the Wycombe road about two miles from Wycombe.

Saxifraga tridactylites. Wall by the village of Hurley.

Sanicula europæa. Woods.

Helosciadium nodiflorum. Ponds, frequent.

Ægopodium Podagraria. Under hedges near houses.

Bunium flexuosum. Stokenchurch woods.

Sium latifolium. This plant grows abundantly in the largest pond at the foot of Cookham down; also in the river at the foot of Clifden sparingly; and by the side of the deep ditch before mentioned, above the suspension bridge.

—— *angustifolium.* Grows in the same ditch with S. latifolium, above the bridge.

Œnanthe fistulosa. In the pond of Sir W. Clayton's, near the house, and in ponds at the foot of Cookham down.

———— *crocata* and *Phellandrium.* Ponds at the foot of Cookham down, &c.

Æthusa Cynapium. Common.

Silaus pratensis. By the side of the river opposite Temple; also very abundant in the meadows about Cookham and under Bisham wood.

Angelica sylvestris. By the banks of the river.

Pastinaca sativa. Common.

Heracleum Sphondylium. Very common.

Daucus Carota.

Torilis infesta. Corn-fields, frequent.

—— *nodosa.* Under a wall by the side of the river near Hambledon; also on Cookham green, and in a field on the right of the Wycombe road, at the first descent.

Scandix Pecten-Veneris. Corn-fields, everywhere.

Anthriscus vulgaris.

Conium maculatum. Exceedingly fine by the river at New Lock; and at Clifden.

Adoxa moschatellina. Woods beyond Marlow common.

Cornus sanguinea. Hedges frequent.

Viburnum Lantana. Hedges, Bisham wood, &c.

——— *Opulus*. Bisham wood, &c.

Lonicera Periclymenum. Hedges &c.

Sherardia arvensis. Corn-fields.

Asperula Cynanchica. Foot of Winter hill, by the path; Medmenham, very fine, and by the banks of the road from Maidenhead to Henley.

——— *odorata*. In all the woods, abundant.

Galium cruciatum. Banks by the Oxford road; Bisham wood &c.

——— *palustre*. Wet places.

——— *Mollugo*. Frequent.

——— *verum*. Road-sides.

——— *saxatile*. Commons.

——— *uliginosum*. Wet places.

——— *Aparine*. Everywhere.

Valeriana officinalis. In wet places near the river abundantly.

——— *dioica*. About Medmenham.

Valerianella olitoria. Corn-fields, frequent.

——— *dentata*. Corn-fields at Clifden, &c.

Dipsacus sylvestris.

Knautia arvensis. Frequent.

Scabiosa succisa.

——— *Columbaria*. By the road-side, Medmenham.

Eupatorium Cannabinum. By the banks of the river abundantly.

Petasites vulgaris and *Tussilago Farfara*.

Erigeron acris. In dry places.

Inula Conyza. New Lock, &c.

Pulicaria dysenterica. Wet places.

Achillæa Ptarmica. By the river side.

——— *Millefolium*. Frequent.

Chrysanthemum Leucanthemum and *segetum*. The latter a most luxuriant weed in the fields on the Henley and Maidenhead road near Hurley.

Pyrethrum Parthenium.

Artemisia vulgaris. Common.

Filago germanica, *minima*, and *Gnaphalium uliginosum*.

Senecio erucæfolius. In the Bisham-wood quarry.

——— *Jacobæa*. Waste places.

——— *aquaticus*. In wet places by the river.

Centaurea nigra and *Scabiosa*.

——— *Cyanus*. Corn-fields at the top of Cookham down &c.

Arctium Lappa and *minus*. By road-sides.

Onopordum Acanthium. At the corner of the village of Hurley, where the road to the mill turns off.

Carduus nutans. Winter hill and Cookham down, abundantly.

——— *acanthoides*, *lanceolatus* and *arvensis*. Frequent.

——— *palustris*. Frequent by the side of ditches and wet places generally.

Silybum Marianum. By the left hand side of the Little Marlow road where the lane before mentioned turns off, beyond Little Marlow; also further on, near the little village on the same road.

Lapsana communis. Common in dry situations.

Cichorium Intybus. By road-sides.

Hypochœris radicata.

Tragopogon ——? In wet meadows.

Picris hieracioides.

Lactuca muralis. Bisham wood &c.

Barkhausia fœtida. This plant, which formerly grew, though very sparingly, in Bisham wood, does not appear to grow there any longer, but it occurs in the waste ground on the north side of the Great Western railway, close to the Maidenhead station, though but sparingly. It may easily be distinguished in any state by its root, which has a powerful smell of bitter almonds.

Crepis virens. Everywhere.

Sonchus oleraceus and *arvensis*. There were two specimens of the former growing in a wet hollow at the top of Bisham wood, of an enormous size; I should think they were at least eight feet high, and were proportionally large in all their parts.

Hieracium Pilosella. On dry banks.

Jasione montana.

Campanula glomerata. Meadows by the river between the town and Bisham wood, very abundantly; also very fine in the wood to the right of the Maidenhead road, on the first ascent.

——— *Trachelium*. Woods, frequent.

——— *rotundifolia*. Dry places, frequent.

——— *patula*. At the top of a lane which turns out of the Henley road on the right, opposite Medmenham church.

Specularia hybrida. Abundantly in a corn-field through which the path passes which enters the town at the Crown inn; also sparingly on a wall at the village of Hurley.

Pyrola minor. This extremely beautiful little plant grows in all the woods round Marlow-common; I have also seen it growing in woods to the right of the Wycombe road. There can be no doubt that it grows in most of the woods in this neighbourhood, for it must undoubtedly be the same as the Pyrola of the Stokenchurch woods, which Sir J. E. Smith suspected might be P. media, and which was found, under the same name, by Mr. W. Pamplin, near Henley-on-Thames.

Monotropa Hypopitys. Bisham wood, above the quarry; also in the woods between the Oxford and Wycombe roads, but sparingly; and at Clifden.

Ligustrum vulgare. Bisham wood, &c.

Chlora perfoliata. Bisham wood, and on the bank of the road at Medmenham.

Erythræa Centaurium. In the wood overhanging the Henley road at Medmenham, and near New Lock, &c.

Gentiana Amarella. On the chalk occasionally, sometimes of great size and beauty.

Menyanthes trifoliata. By the side of a ditch in a wet meadow between New Lock and Medmenham, and also by the Strand, at Cookham, very abundantly.

Convolvulus arvensis and *sepium.*

Cynoglossum officinale. Wood of Clifden which overhangs the river.

Lycopsis arvensis. By the side of the Henley and Maidenhead road near the field-path to Hurley.

Symphytum officinale. Bank of the river, everywhere.

Echium vulgare. Near Cookham bridge, very fine, and elsewhere.

Lithospermum officinale. Abundant by the side of the Henley road at Medmenham, and in Bisham wood, sparingly.

——————— *arvense.* Corn-fields, but not common.

Myosotis palustris. By the river and in wet places generally.

——— *arvensis.*

——— *versicolor.* By a pond adjoining the Oxford road.

Solanum nigrum and *Dulcamara.* Common.

Atropa Belladonna. In the woods between the Oxford and Wycombe roads, copiously; it also grows sparingly by an entrance into Bisham wood, a short distance up the ascent of the Maidenhead road.

Hyoscyamus niger. Near a pond at the back of the town, not far from the church; also by the side of a ditch in the common pasture under Cookham down; Pinkney's heath.

Verbascum Thapsus and *nigrum.* Common.

Verbascum Blattaria? One specimen at New Lock, perhaps escaped from a garden.

Orobanche major. Growing on furze upon the little common before mentioned, on the right of the Wycombe road.

——— *minor*. In the common fields opposite Bisham wood; also in a field above Cookham down, abundantly.

Digitalis purpurea. In the woods, frequent.

Antirrhinum Orontium. In the common fields opposite Bisham wood.

Linaria spuria. In cornfields on the right of the Henley road, just out of the town.

——— *repens*. This plant still grows abundantly in its old recorded habitat, namely, on the steep bank by the Henley and Maidenhead road, above Henley bridge.

——— *minor*. This species also grows there, but sparingly.

——— *vulgaris*. Frequent.

Scrophularia nodosa. Bisham wood &c.

——— *aquatica*. Frequent by the river and in moist places.

It is curious that in so wooded a country, and in a neighbourhood so well suited to it in every respect, so common a plant as *Melampyrum pratense* does not appear to grow.

Pedicularis palustris. Common in wet meadows; it is very fine and abundant in marshy meadows to the left of the first lane leading from the Henley road to Sir W. Clayton's.

——— *sylvatica*. Wet common by the Stokenchurch road.

Rhinanthus Crista-galli. In meadows.

Euphrasia officinalis and *Odontites*. Frequent.

Veronica scutellata. Little pond to the right of the Stokenchurch road.

——— *Anagallis* and *Beccabunga*. Ditches &c.

——— *montana*. In Bisham wood, and in most of the moist woods in the neighbourhood.

——— *officinalis*. Woods, common.

——— *Chamædrys* and *agrestis*.

Mentha sativa, (hirsuta, *Sm.*). Wet places, common.

——— *arvensis*. Common.

Lycopus europæus. Common by the banks of the river.

Salvia verbenaca. By the road-side at Medmenham, and between Medmenham and Henley, abundantly.

Origanum vulgare and *Thymus Serpyllum*. Common.

Calamintha Nepeta. This plant grows on the bank of the first lane before mentioned, which turns off from the Little Malvern road, on the left, beyond Little Marlow; it also grows in small quantity on the main road, immediately before the lane.

Calamintha officinalis. Far commoner than the latter species; it grows in various places along the Little Marlow road and on the dry banks by most of the lanes thereabouts; it also grows on the borders of Bisham wood, at the top of the hill.

——— *Acinos* and *Clinopodium.* In corn-fields and dry places, frequent.

Scutellaria galericulata. By the banks of the river.

Nepeta Cataria. In hedges, particularly on the Henley road between Medmenham and Henley.

Lamium purpureum, album and *Galeobdolon.*

Galeopsis Ladanum. Corn-fields.

——— *Tetrahit.* Hedge-sides &c.

Stachys Betonica. Cookham dean; the only place where it appears to grow in the neighbourhood.

——— *sylvatica.*

——— *palustris.* By the river-side, frequent.

Verbena officinalis.

Utricularia vulgaris. Pond at the foot of Cookham down, nearest Cookham; also in the ditch before mentioned which bounds the meadow immediately above the suspension bridge.

Hottonia palustris. In the ditches by the river above the suspension bridge, and in ditches at New Lock very abundantly.

Lysimachia vulgaris. By the river-side abundantly.

——— *Nummularia.* Banks about Little Marlow, and on the Henley road near Henley; also in the wet meadows about Cookham.

——— *nemorum.* Bisham wood, abundantly.

Plantago Coronopus, lanceolata, media, major. Common.

Daphne Laureola. In the wood which overhangs the Henley road at Medmenham; also in woods to the right of the Oxford road, but sparingly.

Euphorbia helioscopia and *Peplus.*

——— *amygdaloides.* Woods &c.

——— *exigua.* Cornfields.

Mercurialis perennis. In all the woods.

Humulus Lupulus. Hedges.

Juniperus communis. Plentiful on the part of Marlow common adjoining the Harleyford woods; occasionally in Bisham wood.

Hydrocharis Morsus-ranæ. Frequent in ponds and ditches.

Orchis militaris. On the precipitous bank of Bisham wood, near the quarry, both below and above the path, but sparingly: it also grows very sparingly in the wood overhanging the Henley road, at Medmenham.

—— *maculata.* Frequent.

—— *pyramidalis.* Woods between the Oxford and Henley roads; by the Henley and Maidenhead road, &c.

—— *conopsea.* Woods between the Oxford and Henley roads; also in the wood at Medmenham mentioned above.

Habenaria bifolia. Bisham wood, especially the continuation of it on the right of the Maidenhead road.

Ophrys apifera. On the turfy slope of the woods between the Oxford and Henley roads, on the right side of the valley.

——— *muscifera.* In almost all the woods more or less.

Listera ovata. Bisham wood.

Neottia Nidus-avis. Very abundant in Bisham wood, on both sides of the Maidenhead road, &c.

Epipactis latifolia. Bisham wood, especially the continuation of it on the right of the Maidenhead road. There is an Epipactis growing in the Stokenchurch woods, which is, in its young state, quite purple in both leaves and stem: it must, I suppose, be E. purpurata. I have seen it also in Bisham wood, but have not had an opportunity of seeing it in flower.

Cephalanthera grandiflora. In Bisham wood, abundantly; and in the woods round Sir W. Clayton's house.

Iris Pseud-acorus. Wet places near the river.

— *fœtidissima.* Wood at Medmenham before mentioned; New Lock, abundantly; woods between the Oxford and Wycombe roads, abundantly.

Ruscus aculeatus. Clifden.

Juncus effusus and *conglomeratus.*

——— *acutiflorus.* Pond in the common fields opposite Bisham wood.

——— *supinus,* (uliginosus, *Sm.*) Cookham dean.

Luzula Forsteri, pilosa and *campestris.* Bisham wood and wet woods generally.

——— *congesta.* At the top of Bisham wood.

Alisma Plantago.

Sagittaria sagittifolia. Ditch above the suspension bridge, &c.

Butomus umbellatus. In one of the ponds at the foot of Cookham down.

Typha latifolia. In the same pond.

Sparganium ramosum and ***simplex.*** In the same pond.

Potamogeton natans. Ditches and ponds.

——— ***crispus.*** In a pond by the side of the Wycombe road, about three miles from Marlow.

Eleocharis palustris. Wet meadow under Bisham wood.

Scirpus lacustris. Thames, frequent.

Carex vulpina. By the side of the river and ditches, common.

—— ***muricata.*** Bank of the Henley road, near the first ascent, and in lanes on that side of the town; Bisham wood, &c.

—— ***remota.*** Bisham wood and by the side of ditches &c.

—— ***ovalis.*** By the side of ponds on Cookham dean, &c.

—— ***sylvatica.*** Bisham wood, &c.

—— ***Pseudo-cyperus.*** Abundantly in a ditch at the foot of Cookham down, by the nearest pond.

—— ***glauca,*** (recurva, *Huds.*). In all the woods.

—— ***hirta.*** By the bank of the river near Sir G. Nugent's.

—— ***vesicaria.*** By a pond in a field immediately below Bisham wood, about half way between the river and the Maidenhead road.

—— ***paludosa*** and ***riparia.*** Banks of the river, &c.

Phalaris arundinacea. By the river side &c., frequent.

Alopecurus pratensis, geniculatus and ***agrestis.***

Milium effusum. Woods, common.

Agrostis vulgaris and ***alba.*** By the side of cornfields &c., abundantly. I suppose both these species grow there, but should be very glad to know of any decided character by which to distinguish the two species.

Phragmites communis. In wet places by the river.

Aira cæspitosa. Wet meadows &c., common.

Trisetum flavescens. Common.

Avena fatua. In a field to the right of the Wycombe road, at the first descent; in the common fields opposite Bisham wood, &c.

—— ***pubescens.*** Winter hill; on the chalk, common.

Arrhenatherum avenaceum. Hedges everywhere.

Holcus lanatus. Roadsides &c.

——— ***mollis.*** On the little common between the Oxford road and King's farm.

Triodia decumbens. Woods to the right of the Henley road, a little way out of the town.

Kœleria cristata. In the little wood on the right of the Maidenhead road at its first ascent, but sparingly.

Poa pratensis, trivialis and *nemoralis.* The latter in woods.

Glyceria aquatica. Abundantly in wet places by the lane which runs parallel with the river, above the suspension bridge, and in the river, frequently.

——— *fluitans.* Ponds and ditches.

Schlerochloa rigida. On walls and dry banks.

Briza media. Common.

Cynosurus cristatus. Ditto.

Dactylis glomerata. Ditto.

Festuca bromoides (Myurus). On a wall behind the town near the church.

——— *ovina.* In dry places.

——— *gigantea.* Bisham wood, and in shady places elsewhere.

——— *elatior.* In the lane before mentioned, running parallel with the river above the suspension bridge, and in wet pastures.

Bromus erectus. Bisham wood, to the left of the path leading to Winter hill, and on the chalk, frequently.

——— *asper.* Bisham wood, and in woods generally.

——— *sterilis.* By road-sides &c.

Serrafalcus racemosus. Growing abundantly in the meadows immediately under Bisham wood, by the side of the river.

Brachypodium sylvaticum. Woods, abundantly.

Triticum caninum. In Bisham wood, on the right, after crossing the little foot-bridge; and on dry banks about Clifden, &c.

——— *repens.* Hedges &c.

Lolium perenne.

——— *multiflorum.* I found this plant growing in a field on the left side of the Maidenhead road, about a mile from the town of Maidenhead; it grew in patches about twice as tall as the L. perenne which surrounded it. The number of florets is variable, but in some plants they are as many as sixteen or seventeen, and the awn is usually rather longer than the glumes.

Hordeum sylvaticum. Abundantly in Bisham wood, and in most of the woods, more or less.

——— *pratense.* Meadows, frequent.

——— *murinum.* Roadsides &c.

G. G. Mill.

Kensington, January, 1844.

Art. CCXX.—*Varieties.*

483. *Note on the Primula elatior.* I am glad to find that the Primula elatior has, this season, claimed the attention of some of our eminent English botanists, and that the result of their examination quite coincides with the opinion I have formed respecting this plant. It grows very abundantly in many of the woods in this neighbourhood, while P. vulgaris is rather uncommon, and is never met with, so far as my observation has extended, in the same woods as P. elatior; in a few places P. veris and vulgaris are found intermixed, and among them is occasionally scattered a plant which I take to be a hybrid between them, partaking of the characters of each, but it is quite different from the real P. elatior, both in the colour and form of the flower, in the calyx, &c.; but in these situations there are only a few scattered among the two parent stocks, while in those places where P. elatior grows, neither P. vulgaris nor P. veris is met with, which, were the former only a hybrid between them, must be considered a very remarkable and inexplicable circumstance. I have had a plant of it in my garden for several years, where it retains in all respects its specific characters.—*G. S. Gibson: Saffron Walden, May* 5, 1844.

484. *Proposal as to the Nomenclature of the Bardfield Oxlip.* Botanists appear more and more to incline to the opinion that Mr. Doubleday's Bardfield oxlip is distinct as a species; and I believe they generally coincide also in the opinion that it is not the plant termed *elatior* by Linneus and the majority of subsequent authors: it may further be stated as the opinion of competent judges, that Mr. Doubleday's plant is the Primula elatior of Jacquin. Sir William Hooker, in the recently published edition of his 'British Flora,' gives Primula elatior of Jacquin as synonymous with Primula veris *β. elatior* of Linneus, without any allusion to the Bardfield plant, and Mr. Babington gives the Bardfield plant as a distinct species, without any allusion to the Linnean plant. We are thus compelled, in order to avoid confusion, to speak of Mr. Doubleday's discovery as *the Bardfield oxlip*, or *Jacquin's elatior*, or to devise some other unscientific term in order to make ourselves understood. This does not seem in accordance with the usage of science. It is quite evident that the name of elatior is preserved out of respect to Linneus, but it is a tribute of respect we have no right to pay. Were Linneus himself living, would he not unite with us in opinion as to the non-identity of the two elatiors? Would he not say, "I object, gentlemen, to your

giving one of my names to a species with which I was unacquainted; I still believe *my* elatior to be nothing more than a hybrid, or a casual variety, *yours* is a distinct species, and must not be confounded with *mine*." I suggest therefore that it should bear the name of Jacquin, if that author was the first to point out its distinctness as a species, and that it should henceforth be called *Primula Jacquinii*. — *Edward Newman; Peckham, May*, 1844.

485. *Note on Lunularia vulgaris fruiting under glass.* About this time last year I received from J. Ralfs, of Penzance, some living specimens of Lunularia vulgaris, with young female receptacles covered by the indusium, being informed by him that they never attain to greater perfection in that neighbourhood. I placed them in a box under glass, with other Hepaticæ, and in two or three months had the pleasure of seeing the peduncle gradually rise, and the fruit fully matured, with its cruciform tubulose processes. As the circumstance of Lunularia fruiting under glass is mentioned in 'Flora Hibernica,' I thought it might be interesting to some of the readers of 'The Phytologist.'—*Isaac Brown; Hitchin, 15th 5th Mo.* 1844.

486. *New locality for Barkhausia setosa.* On carefully examining some plants which I gathered last summer in a clover-field, on a chalk soil, near Hitchin, I find that they perfectly agree with the description of Barkhausia setosa in Koch's Synopsis, and have no doubt that they were introduced with the clover-seed. This makes the third station, if I mistake not, for this plant. — *Wm. Dawson; Hitchin, May* 15, 1844.

487. *Note on Agaricus macrorhizus.* Since I sent you the list of Agarics found in the neighbourhood of Hitchin (Phytol. 968), Mr. I. Brown met with a fine crop of Agaricus macrorhizus, growing plentifully in a cucumber-bed, some having a pileus an inch and a half broad, and a root five or six inches long. Agaricus domesticus was also found growing on damp wood in a wash-house.—*Id.*

488. *List of Mosses found near Penzance.* A list of Algæ, many of them peculiar to this district, from the pen of Mr. Ralfs (Phytol. 193), and one of the Hepaticæ of Penzance by Mr. Curnow (Id. 609) having already appeared in the pages of 'The Phytologist,' I venture to add also a list of the mosses of the neighbourhood, presuming it will not be altogether devoid of interest, as it contains several rather rare species. Although many additions have been made during the last winter, and the list at present is by no means a short one, still I believe that much remains to be done in investigating the mosses of this western limit of England, the greater portion of the north, and some

portion of the southern coast, still remaining unexplored; a line of country, which, especially where some rivulet dashes down the cliffs, must be peculiarly adapted to the growth of many cryptogamic plants. It may be as well to observe that all the species mentioned here grow within four miles of Penzance, except those which are stated to occur only at Hayle, St. Ives, the North Coast, or the Land's End, which would be about eight miles distant.

Phascum subulatum.

——— *axillare.* Field near Newlyn, *Mr. Curnow.* The preceding winter we were unable to find this moss.

——— *cuspidatum.* Banks, not very common.

——— *rectum.* Banks, most plentiful between Penzance and Hayle.

Sphagnum obtusifolium and *acutifolium.*

———— *cuspidatum*, B. Moor near Madron.

Gymnostomum viridissimum. Trunks of trees; fruit not uncommon in this neighbourhood.

—————— *truncatulum.*

—————— *crinita*, (Pottia crin. *Wils. MS.*) On the ground over a cave between Mousehole and Lamorna.

—————— *conicum.* Banks, chiefly between Penzance and Hayle.

*—————— *ericetorum*, var. (Physcomitrium ericetorum, *Br. & Schimp.*, Gymnostomum fasciculare, *Hook. & Tayl.*) Coast between Mousehole and the Land's End, rather plentiful in wet places.

* —————— *fasciculare.* (Phys. fasciculare, *Br. & Sch.*) Frequent in meadows, both in wet and dry situations.

—————— *pyriforme.* Common.

—————— *microstomum.* St. Michael's Mount, a single tuft gathered.

Anictangium ciliatum. Rocks and stones.

Schistostega pennata. Moist recesses of banks in many places, fruit rare in this district.

Diphyscium foliosum. Banks near Choôn. Road-side above Trenguanton carn, *Mr. Curnow.*

Weissia affinis. Cliff between Mousehole and Lamorna, along with Pottia crinita.

——— *cirrata.* Sparingly on a stone in Trevalyer bottom,† *Mr. Ralfs.*

——— *curvirostra.* Bank near Hayle causeway, *Mr. Ralfs.*

——— *controversa.*

——— *verticillata*, B. Wet rocks on the coast near St. Ives.

Grimmia maritima. Common on rocks above high-water mark.

———— *pulvinata.* Stones near Bologgas by no means abundant.

Didymodon purpureus.

———— *trifarius.* Coast near Newlyn; plentiful around Hayle.

———— *flexicaulis*, B. Sennen green near the Land's End, *Mr. Ralfs.*

Trichostomum funale. Tol Carn, Newlyn, sparingly in fruit.

—————— *heterostichum.* Common on rocks and stones.

—————— *aciculare.* Plentiful in the rocky streams: it also occurs in dry situations.

—————— *fasciculare.* Not nearly so abundant as the last; fr. rather scar.

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* I am indebted for my information respecting these two mosses to Mr. Wilson, who also kindly named several of the other species which were sent to him by Mr. Ralfs.

† A *bottom* is a provincial term here for a narrow valley, mostly where some rivulet runs down towards the sea.

Trichostomum polyphyllum. Very comn.

Dicranum bryoides.

——— *β. osmundioides*. In caves of the southern coast.

——— *adiantoides*. Fruit scarce.

——— *taxifolium*. Fruits near Newlyn

——— *glaucum*, B.

——— *flexuosum*. Heathy moor, rather common.

——— *squarrosum*, B. North coast, near Morvah.

——— *scoparium*. Bologas.

——— *Dillenii*. Abundant on the moors.

——— *varium*. Bank near Penzance; plentiful in an oldclay-pit near Copperhouse.

——— *heteromallum*.

Tortula rigida. Wall-tops &c. very com.

——— *muralis*.

——— *ruralis*. Barren upon Marazion green and the sand-banks at Hayle.

——— *β. lævipila*. In fruit on trees and stones, but not very common.

——— *unguiculata*.

——— *fallax*. Foliage in many places; fruit on a wall near Bologgas.

Polytrichum undulatum and *proliferum*.

——— *juniperinum*. I have met with several specimens of this moss with two distinct setæ arising from the apex of the stem, but having the calyptræ closely united "by their hairy covers, thus forming, as it were, a two-celled calyptra," precisely as mentioned by Mr. T. Sansom of P. commune (Phytol. 93), who gives a detailed account of this monstrous variety.

——— *urnigerum*, B. Chy-an-hâll moor.

——— *commune, aloides, nanum*.

Entosthodon Templetonii. Pathway along the cliffs between Hayle & St. Ives.

Funaria hygrometrica.

Zygodon conoideus. Sparingly on a single tree in Trevayler bottom, *M. Ralfs*.

Orthotrichum affine and *β. pumilum*.

——— *diaphanum*. On trees, common, sometimes upon stones.

——— *crispum*. Rare in fruit: also found on stones by the coast.

——— *pulchellum*. On elder trees in Keneggie-bottom, near Badger's cross, *Mr. Ralfs*.

Bryum palustre. In fruit on Tremethick moor.

——— *carneum*. Old clay-pit near Copperhouse, *Mr. Curnow*.

——— *argenteum, capillare, cæspititium*.

——— *nutans*. Cliff near Newlyn.

——— *alpinum*, B. Rather frequent in wet places upon the cliffs beyond Mousehole.

——— *ventricosum*, B.

——— *ligulatum*. In fruit at Trevaylerbottom.

——— *punctatum*. Sides of streams, co.

——— *hornum*. Abundant.

——— *Tozeri*. Barren in several places; in fruit in a hole of the cliff near Newlyn, *Mr. Curnow*.

Bartramia pomiformis. Banks, common.

——— *fontana*. Common. A small variety in fruit on the coast near Mousehole, and on the north coast.

Pterogonium gracile, B. Tol Carn, Newlyn.

Leucodon sciuroides, B. Tree in Lovelane, Penzance.

Neckera crispa, B. Path along the cliff between St. Ives and Hayle; also on the north coast.

Daltonia heteromalla.

Fontinalis antipyretica, B.

——— *squamosa*. Abundant in all the rapid streams.

Hookeria lucens. Sides of streams, &c., common.

——— *læte-virens*. Mousehole-cave, very sparingly in fruit, *Mr. Ralfs*.— This rare moss was also discovered by Mr. Borrer, in another cave between Mousehole-cave and Lamorna but I fear it is now extinct there, as

Mr. Ralfs and myself searched the spot diligently this winter, but were unable to find a vestige of it.

Hypnum complanatum. Fruit not comn.

——— *undulatum*, B. Rather frequent.

——— *denticulatum.* Common.

——— *serpens.*

——— *populeum.* Stone hedges &c. in many places.

——— *purum.* Fruit scarce.

——— *Schreberi.* Common.

——— *catenulatum*, B. In several places; abundant in some of the caves of the coast.

——— *plumosum.* By Trengwainton-pond.

——— *sericeum.* Fruit not common.

——— *lutescens*, B. On the ground occasionally; very abundant upon the sand-banks at Hayle.

——— *alopecurum.*

——— *curvatum.* Not very common.

——— *myosuroides.*

——— *splendens.* Moist banks &c. frequent; fruit occasionally met with.

——— *proliferum.* In fruit in many places.

——— *prælongum.*

——— *blandum*, B. Stone wall near Gulval, also at St. Michael's mount.

Hypnum rutabulum, ruscifolium.

——— *striatum.* In fruit in Trevalyer-bottom, and near Hayle.

——— *confertum.*

——— *cuspidatum.* In fruit at Tremethick moor and Marazion marsh, and also near Copperhouse.

——— *polymorphum*, B. Between St. Ives and Hayle

——— *stellatum*, B. North coast near Morvah.

——— *loreum*, B. Banks &c.

——— *triquetrum.* In fruit near Bologas and at Trevalyer-bottom.

——— *brevirostre*, B., *squarrosum*, B.

——— *filicinum*, B. A large var. upon rocks by the sea, where water runs down, near Mousehole, and at Hayle.

——— *palustre*, B. Tringwainton pond.

——— *fluitans.* In fruit at Chy-an-hâl moor.

——— *scorpioides*, B. Tremethick moor

——— *cupressiforme.* Extremely common. A small variety with an erect cylindrical capsule and rostrate lid, is very abundant upon apple-trees.

——— *molluscum*, B. Plentiful by the side of a path along the cliffs between Hayle and St. Ives. Also at Newlyn, very sparingly.

I cannot do less than acknowledge that I am indebted to Mr. Ralfs and Mr. Curnow, for their kind assistance in my investigations, and for having directed me to the stations of many of the species.—*Alfred Greenwood : Penzance, May* 11, 1844.

489. *Note on Anthyllis vulneraria.* Upon examining various specimens of this plant, gathered near Mousehole, I was surprised to find that the stamens were not monadelphous, as stated in all the Floras to which I have access, but truly diadelphous, or nine united and one free. May I enquire, through the medium of 'The Phytologist,' whether this variety be of frequent occurrence ; for a variety I suppose it must be, as, had it been the usual state of the plant, botanists would surely never have placed it in the monadelphous group. — *Id.*

490. *List of Agarics found near Bromley, Kent.* In compliance with Mr. Dawson's request (Phytol. 968), I subjoin a list of Agarics

found during the last three years in the neighbourhood of this place; all, except A. violaceus, within a radius of three miles.

Agaricus phalloides
vaginatus
muscarius
asper
procerus
cristatus
granulosus
ditto, white variety
melleus
eburneus
Cossus
hypothejus
fulvus
rutilans
imbricatus
multiformis
argyraceus
Columbetta
personatus
nudus
alutaceus
emeticus
adustus
torminosus
deliciosus
Volemum
quietus
fuliginosus
piperatus
vellereus
exsuccus
infundibuliformis
β. major
nebularis
odorus
dealbatus
grammopodius
pratensis
virgineus
psittacinus
conicus

Agaricus coccineus
laccatus
β. amethystinus
sulphureus
radicatus
velutipes
fusipes
butyraceus
dryophyllus
peronatus
oreades
esculentus
ramealis
Rotula
androsaceus
caulicinalis
epiphyllus
filopes
alcalinus
galericulatus
elegans
purus
lacteus
Fibula
pyxidatus
fragrans
cyathiformis
ostreatus
palmatus
stypticus
prunulus
pluteus
pascuus
Sowerbei
gentilis
violaceus
glaucopus
sanguineus
iliopodius
aimatochelis
aureus

Agaricus caperatus, β.
squarrosus
collinitus
fastibilis
flocculosus
rimosus
geophyllus
furfuraceus
tener
hypnorum
involutus
variabilis
bombycinus
volvaceus
Georgii
campestris
semiglobatus
vervacti
æruginosus
lachrymabundus
lateritius
fascicularis
callosus
areolatus
stipatus
atomatus
gracilis
semiovatus
fimiputris
vitellinus
titubans
disseminatus
comatus
atramentarius
micaceus
cinereus
niveus
plicatilis
glutinosus
rutilus

George Sparkes; Bromley, Kent, May 14, 1844.

491. *Note on the Bardfield and Claygate Oxlips.* The correspondents of 'The Phytologist' appear to be still feeling an interest in the subject of the oxlips. I am induced therefore to point out a charac-

ter of the Bardfield plant (Primula elatior, *Jacq.*) which will probably afford a certain distinction between the latter and the spurious oxlips. In the cowslip and primrose, and all their varieties, a circle of scale-like glands surrounds the orifice of the tube of the corolla. These glands are absent from the Primula elatior. It is difficult to specify any other sufficient character, as I have seen exceptional instances to all the characters (taken singly) by which this plant is distinguished from the other two species in Mr. Babington's Manual; the specific character drawn out by that author being quite accurate, but not invariably applicable. While alluding to the oxlips, I take advantage of the opportunity of also again mentioning a peculiar variety of the primrose, spoken of in the first No. (Phytol. 9), although at the time I was not aware that I was writing a letter to be printed verbatim. The plant has remained in my garden since the spring of 1841, flowering freely, but without a single young plant appearing about it: this apparently countenanced the idea of its hybrid origin. To obtain better proof, I collected the seeds last year, and sowed them this spring in a flower-pot, kept well watered: the result is now seen in dozens of young plants, which so far tends to negative the supposition of hybridity. These young plants will not flower before next year. — *Hewett C. Watson; Thames Ditton, May* 25, 1844.

492. *Note on Cystopteris alpina and regia.* The long-mooted question respecting the distinction between Cystopteris alpina and regia appears to be in almost as unsatisfactory a state as it ever was. Francis treats it in a very summary manner (see his note, foot of p. 24). His conclusion, that we "are bound to conclude that when the the plant was vigorous, it took one character, and now that it is but struggling for existence, it assumes the other," seems extremely unsatisfactory. Last winter, some specimens came into my hands from Mr. Shepherd, of the Liverpool Botanic Garden, a gentleman whose long celebrity in the cultivation of ferns, renders his opinion of some weight. One was marked "Cystea alpina, Hook. Br. Fl. Switzerland;" the other, "Cystea regia, Bernh. Settle, Yorkshire. 1816." The extreme dissimilarity between the specimens striking me at first sight; and on further examining them with a glass, it being still more apparent, I was induced to enquire further of that gentleman respecting them. He said that he had gathered C. regia himself at Settle, twenty-eight years ago; he had brought live specimens with him from Settle, which plants he had cultivated ever since that time, but they remained in every way (through so long a period of cultivation) the same as those he had gathered in a wild state. The specimen he

sent me was a wild one, and agreed in every way with Sir J. E. Smith's description in 'English Flora.' Its larger, stouter, and every way fuller habit, being apparent at the first glance. C. alpina, Mr. Shepherd said was a Swiss specimen: it had been cultivated for some years by him from plants sent him by Mr. Otto. Now though alpina was a cultivated specimen, and had had full chance of becoming "vigorous" in the gardens, and although regia was wild — "struggling," "we are bound to suppose," for existence—in a place where it is most probable it is now extinct; yet the latter is by a very great deal the stouter of the two. Being but a novice in botanical research, and incapable of forming an opinion on so difficult a matter, I have been induced to refer the matter to you, hoping that after you have examined the enclosed specimens, you will let me know the result in 'The Phytologist.'—*James Lowe; Twycross, April,* 27, 1844.

ART. CCXXI.—*Proceedings of Societies.*

LINNEAN SOCIETY OF LONDON.

February 20, 1844. — The Lord Bishop of Norwich, President, in the chair. Read, a further portion of Mr. Griffith's memoir on Root-parasites and their allies.

March 5.—E. Forster, Esq., V.P., in the chair.

Wm. Hopkins Milne, Esq., was elected a Fellow.

Read, a paper "On Spiranthes gemmipara." By C. C. Babington, Esq., M.A., F.L.S., G.S., &c. Two specimens of this very rare plant were first found by Mr. James Drummond, in or about the year 1810, near Castletown, Bearhaven, in the county of Cork, "opposite the western redoubt, growing in a salt-marsh near the shore." One of these was communicated to Sir J. E. Smith, who published it in his 'English Flora' under the name of Neottia gemmipara, with a description furnished by Mr. Drummond. Within these few years the plant has been again discovered near to, but probably not in exactly the original spot, by Dr. P. A. Armstrong, who, on the 30th of September, 1843, conducted Mr. Babington and Mr. E. Winterbottom to the station, where they saw about twelve specimens, several of which had been destroyed by cattle, and all were in a rather advanced state of flowering. Mr. Babington has given a detailed description of the plant from the specimens then collected, and has subsequently identified it with specimens of Reichenbach's Spiranthes cernua, from N. America, in Sir W. J. Hooker's herbarium. It differs in some particulars from the other European species; the most remarkable discrepancy consisting in the connexion of all the sepals with the two lateral petals. The difference in habit is considerable from the great density of the spike, and the arrangement of the flowers in three spiral lines.

BOTANICAL SOCIETY OF EDINBURGH.

Thursday, April 11, 1844. — Professor Graham, President, in the chair. Donations to the library and herbarium were announced from Dr. Gottsche, Altona, Mr. W. C. Trevelyan, Mr. C. C. Babington, Mr. Parker, Mr. Ogilvie, Mr. Jackson and Mr. Evans.

The following papers were read: —

1. On four genera of Desmidieæ, by Mr. Ralfs, Penzance. In these papers, which were illustrated by beautifully executed sketches, fourteen species of this group are described, nine of which belong to Euastrum, two each to Tetmemorus and Micrasterias, and one to Berkeleya. Regarding the former of these, Mr. Ralfs makes the following remarks, which are worthy of attention from such botanists as may wish to study this minute though interesting family: — "The species of Euastrum are not well defined; plants of this genus vary greatly in form, and it is not unlikely that young fronds have been described as distinct. Whenever it is practicable, the frond should be examined in *four* different directions, namely, in the *front* or usual position, at the *side*, at the *end*, and by a *transverse* or *junction view*, after the segments have been separated." And again, in describing E. gemmatum, he says,—" Whilst engaged in examining this species I was first struck with the advantage to be derived from the figure of the *transverse view* in the discrimination of nearly allied species. I have since obtained Meneghini's Synopsis of this family, and find that he has extensively availed himself of it in forming his specific characters of this genus."

2. Note on a Monstrosity of the Pistil of Primula vulgaris. By Mr. C. C. Babington, M.A., &c., Cambridge. The curious monstrosity described in this paper was sent to the author by Mr. J. H. Walton, of St. Bees College, in Cumberland. Flowers of the usual form and structure were found on the same root, with two flowers possessing the anomalous organ, which Mr. Babington describes as follows: — " Within the base of the corolla is situated a small fleshy cup, from the centre of which springs a cylindrical stem, capped with another shallow fleshy cup, having a wavy margin. An exposed conical placenta, covered with peltate ovules, is seated in the centre of the latter cup. Thus the true ovary is converted into a cup-shaped body, and the capitate stigma has become an open fleshy ovary." The

description of this curious structure gave rise to some discussion, in which the President and Dr. Greville took a part.

3. On the Fructification of Cutleria, and continuation of the Marine Algæ of the vicinity of Aberdeen. By Dr. Dickie, lecturer on Botany in King's College. In this communication (in which the remainder of the olive-coloured Algæ, hitherto observed on the Aberdeenshire coast, are enumerated), the author discusses at considerable length the characters which have been assigned to various species by different writers on Algæ, and states his own views respecting them. He also notices the comparative paucity of the marine Flora of Aberdeenshire, ascribing the absence of the more delicate species, partly to the unsheltered nature of the coast, and partly to the influence of temperature; and says,—"Scarcely one half of the Melanospermous Algæ, enumerated in Harvey's Manual as occurring in Britain, are found here—the proportions being as 34 to 80."

4. On some British species of the genus Œnanthe. By John Ball, B.A., &c., Dublin. In this paper three species of Œnanthe are described as natives of Britain; viz., Œ. pimpinelloides, *Linn.*, Œ. silaifolia, *Bieb.* (peucedanifolia, *Sm.*), and Œ. Lachenalii, *Gmel.* The first is stated to be very rare, the author having only seen one specimen wanting fruit, which was gathered near Forthampton, in Gloucestershire, by Mr. E. Lees. He is, however, fully of opinion, that it is the true pimpinelloides of Linnæus and the continental botanists, and proposes that the plant should resume its place as a species in the English Flora; the last is stated to be the commonest of the group—he having received it from several parts of England, from the coast of Galloway, and from near Dunbar in Scotland. The paper concludes with the following remarks on the value of the characters of these species: — "The position and size of the tubers of the root are, I suspect, of doubtful constancy. Observation must determine its importance. The general disposition and proportions of the leaves are probably much to be depended on here, and throughout the whole order. The hollowness or solidity of the stem depends, I believe, almost wholly on the place of growth, and is of no moment. The petals vary somewhat in size, but scarcely in form, those of the outer sterile florets being always compared with each other. The form of the fruit seems not so constant as might be expected. The presence or absence of the incrassated summit of the pedicel I never have seen to vary."

Thursday, *May* 9, 1844. — Professor Graham, President, in the chair. The following papers were read: —

1. On the Difference between the Robertsonian Saxifrages of Ireland, and those of the Pyrenees. By Mr. C. C. Babington, M.A., F.L.S., &c. In this paper the author pointed out the differences which he had observed between the Irish species of Saxifraga referrible to Haworth's genus Robertsonia, and the corresponding plants of the Pyrenees. In a paper contained in the 'Annals of Natural History,' he had already shown that the Pyrenean S. umbrosa, the typical plant of the group, differs from the Irish form; but was not then aware that precisely the same differences existed between the S. Geum and S. hirsuta of these two countries. "The differences referred to," observes Mr. Babington, "are found in the form of the margin of the leaves, which may be correctly denominated '*crenate*' in the Pyrenean plants, but to which the terms '*acutely crenate*,' '*serrate*,' or '*dentate*,' must be applied when the Irish specimens are described." The paper was accompanied by drawings of the leaves of the species under consideration.

2. Contributions to British Jungermanniæ. By Dr. Taylor, Dunkerron. Communicated by Mr. W. Gourlie, jun. Glasgow. In this paper six species of Jungermannia, new to the British Flora, are described, viz., J. nimbosa, *Taylor*, MS., J. curta, *Martius*, J. Thuja, *Dicks.*, J. rivularis, *Nees*, J. Dillenii and J. Aquilegia, *Taylor*, MSS., with a minute diagnosis of each species.

3. On the genus Staurastrum, (Desmidieæ). By Mr. John Ralfs, Penzance. In this paper, which is a continuation of a series on the Desmidieæ, fourteen species are described, with an analysis of the genus, and drawings exhibiting the appearance of the frond in each species described, both in a front and end view.

4. A second paper by Mr. Babington was read—"On some British species of the genus Œnanthe." This communication was drawn up after the perusal of Mr. Ball's paper on the same subject, read before the Society at last meeting. The author agrees with that gentleman in believing that the true Œ. pimpinelloides of Linnæus is indigenous to England, he having received specimens of a plant nearly agreeing with Mr. Ball's description, from the Rev. W. L. P. Garnons, which were gathered in a "marsh between Weymouth and Portland Island." In reference to the other species, viz., Œ. peucedanifolia, *Smith*, and Œ. silaifolia, *Bieb.*, there seems still to exist considerable difficulty, which the author has not yet been able satisfactorily to explain, from the want of authentic specimens of Bieberstein's plant.

5. An additional note on the monstrosity of the Pistil in Primula vulgaris. By Mr. C. C. Babington. In the account given of this

curious monstrosity at the last meeting of the Society, no mention was made of the state of the male organs or the floral envelopes. Mr. Babington has supplied this desideratum in the present notice. The stamens were of the usual form, and in the usual position; and he now supposes that the two cups alluded to in the former notice, as occupying the place of the capsule, are formed by two whorls of carpellary leaves, and that the development of two in place of one, has deprived each of the power of becoming a perfect capsule, or of producing a style in the usual manner.

A donation to the library was presented from F. S. Cordier, M.D., Paris, being his 'Histoire et Description des Champignons.' David Walker, Esq., M.A., North Hill, Colchester, was elected a non-resident Fellow of the Society.—*Edinburgh Evening Post and Scottish Standard.*

BOTANICAL SOCIETY OF LONDON.

May 3, 1844.—J. E. Gray, Esq., F.R.S., &c., President, in the chair. Various donations to the library and herbarium were announced.

A specimen of Barkhausia setosa was presented by G. S. Gibson, Esq., which was stated to have been found by Dr. J. B. Wood, in corn-fields, at Withington, near Manchester.

A specimen of Primula vulgaris, bearing three flowers upon a long, slender scape, was exhibited from Mr. D. Stock, of Bungay, as an example of the plant usually (though incorrectly) called Primula elatior by the botanists of that part of England. Having been enclosed in a post letter before drying, it was too much shrivelled to admit of its being assigned quite certainly to the variety *caulescens* of the London Catalogue. The variety *intermedia* of the same Catalogue usually bears ten or twenty flowers on a scape, and approximates to the cowslip in its deep colour and short pubescence.

A monstrosity of Primula vulgaris was also presented by Mr. D. Stock. In this specimen, a short peduncle terminated in a funnel-shaped calyx, formed by the adhesion of fifteen sepals, and enclosing two distinct corollas; the limb of one corolla being divided into eight lobes, that of the other into seven.

Read, "A Synoptical View of the British Fruticose Rubi, arranged in groups, with explanatory remarks, (Part 2)," by Edwin Lees, Esq., F.L.S.—*G. E. D.*

MICROSCOPICAL SOCIETY OF LONDON.

May 15, 1844.—Thos. Bell, Esq., F.R.S., &c. President, in the chair.

Mr. Bowerbank called the attention of the Society to a minute species of Conferva growing between the lenses of an achromatic object-glass, which he described as being chiefly composed of branching elongated tubes, containing molecular spherules at irregular distances, and accompanied with the appearance of moisture adhering to the tubes. Another form was that of a series of molecular spherules touching each other, and presenting a moniliform appearance, this he attributed to the escape of those bodies from the tubes, and suggested the probability that this mode of arrangement might be due to an extension of the principle of polarization. He also produced some objects mounted on glass, under talc, in which the paper covering them had been *pasted* down, and in which a Conferva of an exactly similar appearance was seen branching over the objects, and greatly obscuring them. Mr. Bowerbank also exhibited au aquatic larva, very commonly found in the water with which London is supplied, in which the circulation is seen in a very beautiful manner, as well as a peculiar contraction of the muscles of the limbs, which, in some instances, appear to be composed of a single fasciculus, and in contracting are simply bent at intervals, without exhibiting an appreciable swelling of the fasciculus of ultimate fibres.

Mr. J. Quekett made some observations on the cause of the iridescent surface of glass which has been for some years either exposed to the atmosphere or buried in the earth. This was clearly shown to be the result of a decomposition of the surface of the glass, which is thus split up into a vast number of exceedingly fine and close lines, intersecting each other in every direction, and thus producing the effect described.

Some observations were made by Mr. E. Quekett, on the crystals contained in the cells of plants. He stated that in most cases the position of these bodies is accidental or uncertain, but in some instances, as in the cells of the covering of the seed of the elm, the crystals are regularly disposed in all specimens, and appear to be adherent only to the walls of the cells that touch each other in the horizontal plane. Mr. Q. made further observations on the supposed use of these bodies in the vegetable kingdom, and was of opinion, as Professor Bailey of West Point, New York, had stated, that these bodies contributed by the decay of the plant, as well as the vegetable matter, to furnish materials for the support of future plants. The enormous quantity (sometimes 80 per cent. in the dried plant), and their composition, which is oxalate of lime in most cases, seemed adapted, by the decomposition of the oxalate into carbon and oxygen, to furnish two important elements of vegetable structure. — *J. W.*